

International Symposium on

Structure and Dynamics of the Oceanic Lithosphere/Asthenosphere System

March 3-6, 2015

Hotel Matsushima Taikanso, Miyagi, Japan

March 3, 2015

Reception 16:00~ near the Hotel's Front Desk

Icebreaker 21:30~22:30 at Main Bar “*Grand Prix*” (1st Floor)

March 4, 2015

Breakfast 7:00~ at Restaurant “*La Ceres*” (B1 Floor)

- Session 1: NOMan Project (8:30-10:10) at “*Fuji-A*” (1st Floor)

[Max. 25 min/presentation including Q&A]

Chair: **Hitoshi Kawakatsu** (Earthquake Research Institute, University of Tokyo)

Hisashi Utada (Earthquake Research Institute, University of Tokyo)
Five years of Normal Oceanic Mantle Project

Akiko Takeo (Hokkaido University)
Seismic Anisotropy in the Oceanic Lithosphere/Asthenosphere System
from Broadband Dispersion Survey

Yuki Abe (Earthquake Research Institute, University of Tokyo)
Receiver function analysis of NOMan BBOBS data: searching for
seismic-LAB

Kiyoshi Baba (Earthquake Research Institute, University of Tokyo)
Thermal and compositional variety of the old oceanic upper mantle
beneath the northwestern Pacific: Implications from electrical
conductivity

Coffee Break (10:10-10:40)

- Session 2: Other Projects (10:40-12:00) at “Fuji-A” (1st Floor)

[Max. 25 min/presentation including Q&A]

Chair: **Daisuke Suetsugu** (JAMSTEC)

Pei-ying Lin (Lamont-Doherty Earth Observatory, Columbia University)

Anisotropic shear-velocity structure of the lithosphere-asthenosphere system in the central Pacific from the NoMelt experiment

Rob. L. Evans (Woods Hole Oceanographic Institution)

The Electrical Structure of the Central Pacific Upper Mantle Constrained by the NoMelt Experiment

Donald W. Forsyth (Brown University)

Lithospheric and Asthenospheric Structure Beneath Old, “Normal” Seafloor South of the Shatsky Rise, Western Pacific

Lunch 12:15~13:15 at Hall “*Chiyo*” (1st Floor)

-Session 3: OBS observations (13:30-15:10) at “Fuji-A” (1st Floor)

[Max. 25 min/presentation including Q&A]

Chair: **Hajime Shiobara** (Earthquake Research Institute, University of Tokyo)

Takehi Isse (Earthquake Research Institute, University of Tokyo)

Surface wave and P-wave tomography using BBOBS data of NOMan Project

Azusa Shito (Kyoto University)

Seismic structure of the oceanic lithosphere inferred from Po/So waves

Brian Kennett (Australian National University)

Po/So propagation in the Pacific and inferences on lithosphere heterogeneity

Nozomu Takeuchi (Earthquake Research Institute, University of Tokyo)

Scattering features of oceanic lithosphere and asthenosphere

Coffee Break (15:10-15:40)

-Session 4: Sunduction zones/Models (15:40-17:20) at “*Fuji-A*” (1st Floor)
[Max. 25 min/presentation including Q&A]

Chair: **Takehiko Hiraga** (Earthquake Research Institute, University of Tokyo)

Tim Stern (Victoria University of Wellington)

A high resolution seismic reflection image for the oceanic LAB
(Lithosphere-Asthenosphere Boundary), beneath southern North Island,
New Zealand

Teh-Ru Alex Song (University College London)

Subduction of lithosphere/asthenosphere system: insights from
shear-wave splitting observations

Andrea Tommasi (Geosciences Montpellier, CNRS & Univ. Montopellier)

Heterogeneity and anisotropy in the shallow suboceanic mantle:
constraints from observations in natural systems

Shun-ichiro Karato (Yale University)

Origin of the LAB (lithosphere-asthenosphere-boundary) and the MLD
(mid-lithosphere discontinuity)

-Discussions (17:20~)

Banquet 19:00~ at Hall “*Chiyo*” (1st Floor)

March 5, 2015

Breakfast 7:00~ at Restaurant “*La Ceres*” (B1 Floor)

-Session 5: Boundaries/Anisotropy (8:30-10:10) at “*Fuji-A*” (1st Floor)

[Max. 25 min/presentation including Q&A]

Chair: **Takashi Tonegawa** (JAMSTEC)

Nicholas Schmerr (University of Maryland)

Imaging the Lithosphere-Asthenosphere Boundary with Underside Reflections

Catherine A. Rychert (University of Southampton)

Seismic imaging of lithosphere and melt beneath Iceland and other hotspots

Shuichi Kodaira (JAMSTEC)

Active-source seismic study in the Northwestern Pacific ocean basin

Jean-Paul Montagner (IPG Paris)

Mid-Lithospheric discontinuity below oceans from seismic surface waves

Coffee Break (10:10-10:40)

-Session 6: Rheology/Mechanics (10:40-12:00) at “*Fuji-A*” (1st Floor)

[Max. 25 min/presentation including Q&A]

Chair: **Satoru Honda** (Earthquake Research Institute, University of Tokyo)

Takehiko Hiraga (Earthquake Research Institute, University of Tokyo)

Diffusion creep of peridotite

Ben Holtzman (Lamont-Doherty Earth Observatory, Columbia University)

What can we infer about upper mantle thermodynamic state from the NOMELT shear velocity structure ?

Tomoo Katsura (University of Bayreuth)

Estimation of temperature, pressure, and water-content dependence of olivine creep from indirect observations

Photo 12:00~

Lunch 12:15~13:15 at Restaurant “*La Ceres*” (B1 Floor)

-Poster session (13:30-15:00)

Coffee Break (15:00-15:30)

-Session 7: Melt/Water/.... (15:30-17:10) at “*Fuji-A*” (1st Floor)

[Max. 25 min/presentation including Q&A]

Chair: **Kiyoshi Baba** (Earthquake Research Institute, University of Tokyo)

Fabrice Gaillard (CNRS-University of Orleans)

The Geodynamics of Melting in the Asthenosphere and its Geophysical Expression

Takashi Yoshino (Okayama University)

Electrical conductivity anisotropy in partially molten peridotite under shear deformation

Marc M. Hirschmann (University of Minnesota)

Small degree melting in the “normal” asthenosphere- models and challenges

Yasuko Takei (Earthquake Research Institute, University of Tokyo)

Temperature, grain size, and chemical controls on polycrystal anelasticity over a broad frequency range extending into the seismic range

-Discussions (17:10~)

Dinner/Reception 19:00~ at Main Dining “*Shiosai*” (7th Floor)

March 6, 2015

Breakfast 7:00~ at Restaurant “*La Ceres*” (B1 Floor)

-Session 8: Global/Deep earth perspectives (8:30-10:10) at “*Fuji-A*”

[Max. 25 min/presentation including Q&A]

Chair: **Hisayoshi Shimizu** (Earthquake Research Institute, University of Tokyo)

Daisuke Suetsugu (JAMSTEC)

Seismic discontinuities of the mantle transition zone beneath the northwestern Pacific Ocean

Pascal Tarits (Université de Bretagne Occidentale)

Is there a deep carbonatite signature beneath the East African Rift?

Göran Ekström (Lamont-Doherty Earth Observatory, Columbia University)

Oceanic Mantle Structure from Global Tomography

Thorsten Becker (University of Southern California)

Oceanic boundary layer structure and dynamics from seismological imaging and geodynamic modeling

Coffee Break (10:10-10:40)

-Session 9: Future directions (10:40-11:30) at “*Fuji-A*” (1st Floor)

[Max. 25 min/presentation including Q&A]

Chair: **Hisashi Utada** (Earthquake Research Institute, University of Tokyo)

Hajime Shiobara (Earthquake Research Institute, University of Tokyo)

BBOBS observations in the NOMan project and the future

Hitoshi Kawakatsu (Earthquake Research Institute, University of Tokyo)

Pacific Array

-Discussions (11:30~)

[Departure]

Posters [March 5, 13:30-15:00] at “Fuji-B” (1st Floor)

(P1 ~ P29)

- P1. **Devesh Walia** (North-Eastern Hill University)
Tectonosphere over the NE Indian Region
- P2. **Manabu Morishige** (Kyoto University)
A new type of 3D small-scale convection in the mantle wedge
- P3. **Chris Havlin** (Lamont-Doherty Earth Observatory, Columbia University)
Melt migration beneath thinning lithosphere
- P4. **Kosuke Yabe** (Earthquake Research Institute, University of Tokyo)
Synthesis and high-temperature creep experiments on polycrystalline Fe-bearing olivine
- P5. **Takashi Tonegawa** (JAMSTEC)
Seismic structure for oceanic crust and sediment in the northwestern Pacific
- P6. **Tim Stern** (Victoria University of Wellington)
Data and interpretation of the LAB beneath Wellington, New Zealand from the SAHKE experiment
- P7. **Maki Hata** (Earthquake Research Institute, University of Tokyo)
Thermal structure and melt fraction distribution in a mantle wedge determined from the 3-D electrical conductivity structure beneath Kyushu in the Southwest Japan Arc
- P8. **Sanae Koizumi** (Earthquake Research Institute, University of Tokyo)
Synthesis of textured olivine aggregate using colloidal processing under high magnetic field
- P9. **Satoru Honda** (Earthquake Research Institute, University of Tokyo)
Tomographic slabs and simulated slabs
- P10. **Hatsuki Yamauchi** (Earthquake Research Institute, University of Tokyo)
Elasticity, anelasticity, and viscosity of a polycrystalline material at near-solidus temperatures
- P11. **Noriko Tada** (JAMSTEC)
Three-dimensional electrical conductivity structure in the upper mantle in the French Polynesia
- P12. **Adam Sarafian** (Woods Hole Oceanographic Institution)
Experimental Determination of the H₂O-undersaturated Peridotite Solidus
- P13. **Emily Sarafian** (Woods Hole Oceanographic Institution)
The Electrical Structure of the Central Pacific Upper Mantle Constrained by the NoMelt Experiment
- P14. **Tetsuo Matsuno** (Earthquake Research Institute, University of Tokyo)
Electromagnetic investigation into mantle transition zone by using the NOMan project data

- P15. **Kenta Sueyoshi** (Earthquake Research Institute, University of Tokyo)
Continuous measurements of electrical conductivity and viscosity of synthesized lherzovite samples during partial melting under gradual temperature change
- P16. **Tadashi Nakakoji** (Earthquake Research Institute, University of Tokyo)
High precision measurement of activation energy of creep of polycrystalline forsterite
- P17. **Akane Ohira** (Yokohama National University)
Crustal and upper mantle structure in southeast of Shatsky Rise in the northwestern Pacific revealed from seismic reflection and refraction data
- P18. **Genta Maruyama** (Earthquake Research Institute, University of Tokyo)
Observations of Grain- to Multi-Grain Scale Deformation: Mechanism of the Development of Crystal Preferred Orientation during Diffusion Creep
- P19. **PeiYing Patty Lin** (Lamont-Doherty Earth Observatory, Columbia University)
Anisotropic shear-velocity structure of the lithosphere-asthenosphere system in the central Pacific from the NoMelt experiment
- P20. **Celia Eddy** (Lamont-Doherty Earth Observatory, Columbia University)
Anisotropy in the Pacific upper mantle from inversion of a surface-wave dispersion dataset
- P21. **Makoto Uyeshima** (Earthquake Research Institute, the University of Tokyo)
Electrical conductivity structure beneath backarc side of Chubu District, Central Japan, revealed by the Network-MT survey
- P22. **Nobukazu Seama** (Kobe University)
Upper mantle electrical resistivity structures beneath the Indian Ocean and back-arc basins
- P23. **Masahiro Osako** (National Museum of Nature and Science)
Thermal conductivity of omphacite, jadeite and diopside under pressure : Implication for the role of eclogite in subduction slab
- P24. **Makoto Yamano** (Earthquake Research Institute, University of Tokyo)
Multiple-scale heat flow anomalies seaward of the Japan Trench associated with deformation of the incoming Pacific plate
- P25. **Akira Yoneda** (ISEI, Okayama Univ.)
Single Crystal Elasticity of Iron Bearing Perovskite and Post Perovskite Analog
- P26. **Naoto Ogawa** (Earthquake Research Institute, University of Tokyo)
Observation and modeling of SKS splitting parameters measured in Japan with Hi-net
- P27. **Kazunori Yoshizawa** (Hokkaido University)
On the effects of parameterization for radial anisotropy constrained by Love and Rayleigh waves
- P28. **Hiroshi Ichihara** (JAMSTEC)
A preliminary resistivity model of the back arc region in the NE Japan arc based on marine and island MT data

P29. **Hitoshi Kawakatsu** (Earthquake Research Institute, the University of Tokyo)

A new parameter characterizing radial anisotropy

P30. **Takehi Isse** (Earthquake Research Institute, the University of Tokyo)

Oceanic plate structures beneath the northwestern Pacific Ocean revealed by explosion experiments

P31. **Kiyoshi Baba** (Earthquake Research Institute, the University of Tokyo)

Possibility of anisotropic structure in electrical conductivity for the upper mantle beneath northwestern Pacific Ocean